

REMARKS

1. Specification

The specification has been amended to correct minor informalities. In particular, the paragraph starting at page 8, line 17 was amended to replace reference numeral 64 with reference numeral S64 for consistency with figure 8. The paragraph starting at page 8, line 22 was amended to remove extraneous reference numerals 14 and 16 that appeared in struck text.

2. Drawing

Enclosed herewith is a replacement sheet containing figures 6-9. On the replacement sheet, figure 8 was amended to replace the second occurrence of reference numeral S60 with the reference numeral S61 to be consistent with the specification at page 7, line 21.

3. Claim Rejections - 35 U.S.C. § 102

Claims 1-9 have been rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 6,001,706 to Tan. Claims 1, 4 and 8 have been amended and claims 5-7 have been canceled.

Amended claim 1 recites that a polysilicon polish stop layer is substantially all converted to a field oxide layer following planarization of the polish stop layer along with a shallow trench layer to achieve co-planarity between the polish stop layer and the shallow trench layer.

Tan does not teach or reasonably teach such a step. In Tan, a polysilicon layer is partially converted to oxide when forming trench liner 16 so that thicker oxide layer 16' portions are formed. Such oxidation is carried out before trench oxide 18 formation and before planarization thereof.

In addition, oxidation of the polysilicon layer is limited to the region E (figure 13) over the corners of the device areas. As described at column 6, conversion of only this specific portion of Tan's polysilicon layer is made to result in etch selectivity between

the oxide and the polysilicon so that a raised profile of the trench structure remains over the edges of the device areas following removal of the polysilicon layer.

As is apparent, the claimed subject is patentably distinct from the disclosure of Tan. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(b) is respectfully requested.

4. Added Claims

Claims 21-28 have been added. The added claims recite additional novel and unobvious aspects of the invention.

For example, claim 21 depends from claim 1 and recites that the trench layer is removed with the converted polysilicon layer (the field oxide layer) so that the trench layer is essentially co-planar with the semiconductor substrate. As indicated, Tan includes raised oxide regions over the edge of the substrate's device areas (abstract, column 3, lines 34-36). These raised areas are described by Tan as being "essential" to avoid wraparound corner effect (column 6, lines 23-25). In contrast, the claimed invention addresses problems associated with undesirable thickness variations (page 1, lines 24-28) by providing co-planarity among layers (page 4, lines 3-11, figure 9, page 5, lines 12-23, page 8, line 17 to page 9, line 11).

Claim 23 recites that the polish stop layer is made from silicon carbide. This feature is not taught or reasonably suggested by Tan. Claims 24-28 depend from claim 23.

5. Conclusion

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned representative to expedite prosecution of the present application.

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If there are any fees resulting from this communication, please charge same to our Deposit Account No. 18-0988, our Order No. H1596.

Respectfully submitted,

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